

CITHAREXYLUM PSILACANTHUM Turcz.

Additional literature: Moldenke, *Phytologia* 6: 262 (1958) and 6: 501--502. 1959; Moldenke, *Résumé* 226 & 447. 1959; Moldenke, *Résumé Suppl.* 1: 15, 16, & 25. 1959.

Examination of a phototype of this species indicates that the plant is Rhaphithammus spinosus (A. L. Juss.) Moldenke. The binomial of Turczaninow, therefore, must be deleted from the list of valid species in Citharexylum.

CITHAREXYLUM PTEROCLADUM Donn. Sm.

Additional literature: Moldenke, *Phytologia* 6: 267 (1958) and 6: 502--504. 1959; Moldenke, *Résumé* 35, 41, 43, 257, & 447. 1959.

Additional citations: MEXICO: Michoacán: Hinton 15852 (N).

CITHAREXYLUM SPINOSUM L.

Additional literature: Moldenke, *Phytologia* 6: 266, 268--270, & 272 (1958) and 7: 33--46. 1959; Moldenke, *Résumé* 49, 51, 55, 56, 58--64, 70, 76, 78, 129, 140, 165, 203, 215, 252--259, 277, & 447. 1959; Moldenke, *Résumé Suppl.* 1: 16 & 18. 1959.

Additional synonymy: Citharaexylum quadrangulare Jacq., in herb.

The Krause specimen cited below exhibits some insect galling of the flowers very similar to that seen in species of Duranta.

Mr. N. Y. Sandwith and M. J. Vidal have recently informed me that the genus Hadongia Gagnep. is a synonym of Citharexylum, and that H. eberhardtii Gagnep. is probably conspecific with C. spinosum. I am awaiting receipt of the type specimen to check this assertion.

Additional citations: WINDWARD ISLANDS: St. Vincent: E. H. L. Krause 16836 (B). TRINIDAD: Cowan & Forster 1278 (Z).

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## NOTES ON NEW AND NOTEWORTHY PLANTS. XXIV

Harold N. Moldenke

CALLICARPA LONGIFOLIA var. HORSFIELDII (Turcz.) Moldenke, comb. nov.

Callicarpa horsfieldii Turcz., *Bull. Soc. Nat. Mosc.* 36 (2): 217. 1863.

CARYOPTERIS NEPALENSIS Moldenke, sp. nov.

Frutex; ramis ramulisque acute tetragonis minutissime puberulis; foliis decussatis; petiolis brevibus pubescentibus; laminis ovatis longe acuminatis regulariter serratis, ad basin rotundatis vel truncatis vel subcordatis, utrinque parcissime minutissimeque puberulis, supra subscabridis; inflorescentiis axil-

laribus terminalibusque divaricatis laxissime cymosis thyrsoidesque ubique dense cano-puberulis; corollis roseis.

Loosely growing shrub, to 4 m. tall; branches and branchlets apparently wide-spreading, slender, acutely tetragonal, sparsely and minutely puberulent; nodes annulate; principal internodes 4--10 cm. long; leaves decussate-opposite; petioles short, 3--14 mm. long, rather densely short-pubescent or puberulent; leaf-blades rather uniformly green on both surfaces or somewhat lighter beneath, beautifully ovate, 4--15 cm. long, 2.8--10.5 cm. wide, rather long-acuminate at the apex, uniformly serrate along the margins except on the acumination and base, varying from rounded to truncate or subcordate at the base, very sparsely and minutely puberulent on both surfaces, slightly scabridous above, those in the terminal inflorescence smallest; midrib slender, flat above, prominent beneath; secondaries 4--6 per side, beautifully arcuate-ascending, flat above, prominent beneath, not plainly anastomosing; tertiaries numerous, subparallel, uniting the secondaries with the midrib and issuing at approximately right angles to them, rather obscure above, subprominulous beneath; inflorescence massive, terminal and thyrsoid, also loosely cymose in the uppermost axils, the axillary cymes long-pedunculate, divaricate, very loosely wide-spreading, rather many-flowered, to 12 cm. long and 9 cm. wide, simple or compound and foliose, the cyme-branches very slender, acutely tetragonal, densely cano-puberulent; peduncles slender, acutely tetragonal, 4--8 cm. long; terminal thyrse massive, often to 50 cm. long and 25 cm. wide, very loosely many-flowered, often foliose, the rachis, sympodia, and cyme-branches sharply tetragonal, more or less densely white-puberulent; bractlets numerous, broadly linear or very narrowly elliptic, 2--7 mm. long, to 1 mm. wide, densely puberulent, a pair at every node of the inflorescence to the ultimate flowers, conspicuous on the cyme-branches; pedicels slender, 1--3 mm. long, densely white-puberulent; calyx campanulate, about 3 mm. long and wide, densely white-puberulent, the rim 5-toothed or 5-lobed, the teeth spreading, ovate, 1--1.5 mm. long, acute; corolla zygomorphic, pink, its tube about 10 mm. long, slender, white-puberulent outside, the limb about 15 mm. wide, white-puberulent beneath; stamens long-exserted, the filaments and anthers pink; fruiting-calyx herbaceous, campanulate, rather closely appressed to the fruit, to 5 mm. long and wide, rather densely whitish-puberulent with antrorsely appressed hairs, the rim very plainly 5-lobed with broadly ovate and subacuminate lobes or teeth; fruit capsular, subglobose, 4--5 mm. long and wide, minutely puberulent, conspicuously venose.

The type of this very distinctive species was collected by O. Polunin, W. R. Sykes, and L. H. J. Williams (no. 537) amid scrub thickets at the edge of cultivation at Jajakot, Pokhara, Nepal, at an altitude of 3500 feet, on August 21, 1952, and is deposited in the herbarium of the British Museum (Natural History) in London. It is obviously related to the Chinese C. divaricata (Sieb. & Zucc.) Maxim.

**CLERODENDRUM DISCOLOR** var. **VERBASCIFOLIUM** Moldenke, var. nov.

Haec varietas a forma typica speviei recedit foliis maximis utrinque densissime longeque pubescentibus.

This variety differs from the typical form of the species in its very large leaves, which are to 17.5 cm. long and 10 cm. wide and very densely long-pubescent on both surfaces.

The type of the variety was collected by A. Peter (no. 32288) between Mission Schlesien and Lugongo, in the Uluguru Mountains above Morogoro, Tanganyika, on November 19, 1925, and is deposited in the herbarium of the Botanisches Museum at Berlin. It was annotated as "Clerodendron verbascifolium n. spec." by "E. W[all?]" and as "Clerodendrum (Cyclonema) sp." by J. B. Gillett at Kew, where, he says, it cannot be matched.

**CLERODENDRUM SERRATUM** var. **NEPALENSE** Moldenke, var. nov.

Haec varietas a forma typica speciei recedit laminis foliorum oblongis vel suboblongo-ellipticis.

This variety differs from the typical form of the species in having its leaf-blades distinctly oblong or slightly oblong-elliptic, 5.5--10.5 cm. long, 1.5--2.5 cm. wide, varying from irregularly appressed-serrate with small and scattered teeth or subentire to coarsely toothed.

The type of the variety was collected by O. Polunin, W. R. Sykes, and L. H. J. Williams (no. 3965) on steep dry grassy slopes in open coniferous forest at Badalkdt, Karnali Valley, altitude 4500 feet, Nepal, on April 24, 1952, and is deposited in the herbarium of the British Museum (Natural History) in London. The collectors note that the upper part of the stem and the bracts are purple with white tomentum, the corolla lobes are very pale mauve, with the anterior lobe darker, the filaments pale mauve, the anthers brown, the pollen white, and the stigma male mauve. The plant was just coming into flower when collected.

**CLERODENDRUM SMITINANDI** Moldenke, sp. nov.

Frutex arborescens; ramulis minute puberulis glabrescentibus; petiolis brevibus glabris; foliis laminarum tenuiter membranaceis ellipticis acuminatis integris utrinque glabris, ad basin cuneato-attenuatis; inflorescentiis axillaribus corymbosis.

Arborescent shrub; branchlets medium-slender, obtusely tetragonal, minutely puberulent when young, glabrescent in age; nodes not amuncate; principal internodes 1.8--2.5 cm. long, mostly abbreviated; leaves decussate-opposite; petioles very slender, short, 6--12 mm. long, glabrous; leaf-blades thin-membranous, rather uniformly dark-green on both surfaces, elliptic, 8--15.5 cm. long, 3--5.2 cm. wide, acuminate at the apex, cuneate-attenuate at the base, entire, glabrous on both surfaces; midrib very slender, flat above, prominent beneath; secondaries very slender, about 6 pairs, arcuate-ascending, flat on both surfaces and rather indistinct; veinlet reticulation obscure; inflorescence axillary, corymbose, about 9 cm. long when in

fruit and about equally wide; flowers not known; fruiting peduncles 2.5--3 cm. long, stoutish, minutely puberulent, apparently leafy-bracteate at several nodes, bearing about 6 closely opposite or crowded branches at the apex, the branches erect or ascending, 4.5--5 cm. long, glabrescent, usually once or twice forked at the apex, with 1 or 2 scattered bractlets on each fork, the bractlets linear, 3--9 mm. long, scattered-puberulent or glabrescent; fruiting-calyx rather heavy, cupuliform, about 17 mm. long and wide; glabrate, deeply 5-lobed, the lobes ovate, about 1 cm. long, about 6 mm. wide at the base, long-attenuate to the acute apex, bright purplish-red when fresh; fruit drupaceous, fleshy, rotund, about 12 mm. long and wide, glabrous, shiny.

The type of this species was collected by my good friend and colleague, Ten Smitinand (no. 3197) by a stream in an evergreen jungle, at about 600 meters altitude, at Pratrang, Pong Namrawn, southeastern Chantaburi, Thailand, on January 21, 1956, and is no. 14380 in the Royal Forest Department Herbarium, deposited in the H. N. Moldenke Herbarium at Yonkers, N. Y.

*COELOCARPUM AFRICANUM* Moldenke, sp. nov.

Frutex multibrachiatus aromaticus vel arbor humilis; ramulis glabrescentibus fragilibus; sarmentis plusminusve albido-pilosis glanduloso-punctatis; foliis numerosis confertis ovato-orbicularibus vel oblongis, ad apicem rotundatis vel subacutis, ad basin acutis usque ad rotundatis vel subtruncatis, crasse dentatis, supra scabris, subtus dense resinoso-punctatis; inflorescentiis terminalibus racemiformibus sparsis paucifloris rectis irregulariter albido-pilosis et resinoso-punctatis; pedunculo rhachideoque subfiliformibus.

Much-branched aromatic shrub or tree, mostly only 1 m. tall or less; branches and branchlets rather slender, gray, very brittle, glabrescent, the smaller ones obtusely tetragonal, the older ones subterete; twigs very slender, more or less sparsely whitish-pilose with scattered irregular erect hairs, more densely so when young, glandular-punctate; nodes not annulate; principal internodes abbreviated, 1--2.3 cm. long or less; leaves numerous, crowded, bright shiny green above, lighter beneath, thin-chartaceous, ovate-orbicular or oblong, 1--1.8 cm. long, 0.5--1.5 cm. wide, rounded or subacute at the apex, varying from acute to rounded or subtruncate at the base, coarsely dentate with 1 or 2 large rounded teeth on each margin, scabrous with short and stiff bulbous-based hairs above, less so and densely resinous-punctate beneath; petioles very slender and short, 1--3 mm. long, scattered or rather densely pilose and resinous-punctate; inflorescence terminal, racemiform, 1.5--2.5 cm. long, sparse, few-flowered, erect, irregularly whitish-pilose and resinous-punctate, the peduncle and rachis subfiliform; bractlets linear, spreading, about 2 mm. long, long-pilose, surpassing the pedicels; pedicels filiform, about 1 mm. long, densely whitish-pilose with erect antrorse hairs; calyx narrow-campanulate, about 3 mm. long and 2 mm. wide, membranous, 5-costate and -angled,



slightly zygomorphic, white-pilose with antrorse hairs on the ribs, puberulent and resinous-punctate between the ribs, the rim 5-toothed with rounded and white-ciliolate non-apiculate teeth; corolla hypocrateriform, small, white, glabrous or subglabrous outside, the tube broadly cylindric, about 4 mm. long, the limb 5-lobed, the throat mauve and densely hairy, the lobes about 2 mm. long, broadly rounded; stamens and pistil included; fruiting-calyx cupuliform, not much accrescent, deeply split, pilosulous-puberulent and resinous-punctate; fruit drupaceous, subglobose, about 4 mm. long and wide, glabrate, deeply 4-lobed and -sulcate, apiculate at the apex with the persistent style-base.

The type of this distinct species was collected by P. R. O. Bally (no. 11144) on a rocky hillside facing east at Geldin, altitude 4300 feet, in the Al Madu Range, British Somaliland, at about  $48^{\circ}35'$  E. and  $10^{\circ}55'$  N., on October 15, 1956, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. This is the first species of the genus known from continental Africa. It has been found also by the same collector (no. 11236) on rocky slopes with *Euphorbia* sp. aff. *E. candelabrum* on the Mait Escarpment, altitude 5400 feet, where "it appears to be rare", on October 28, 1956; by Captain E. F. Peck (no. Y.119) at Dallo Erigavo on July 21, 1942; and by Glover & Gilliland (no. 742) on a rock slab at Daganyado in the mist belt of the Coastal Mountains on February 10, 1945.

*DURANTA REPENS* var. *SERRATA* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis elliptico-lanceolatis regulariter grosseque serratis recedit.

This variety differs from the typical form of the species in having its leaves much larger, elliptic-lanceolate or oval in shape, and with the margins quite regularly serrate from near the apex to near the base.

The type of the variety was collected by Santiago Venturi (no. 9059) in the Parque Centenario, at an altitude of 450 meters, dept. Capital, Tucumán, Argentina, in May, 1929, and is deposited in the Britton Herbarium at the New York Botanical Garden. It is described as a shrub 2 m. tall, with rose flowers. Whether it was cultivated at the type locality is not known, but seems likely since the variety is otherwise known to me only from Cuba and Jamaica, where it is native.

*GLOSSOCARYA PUBERULA* Moldenke, sp. nov.

Frutex; ramis gracilibus tetragonis dense breviterque griseo-pubescentibus vel puberulis; foliis oppositis tenuiter chartaceis breviter ellipticis vel subrotundis, ad apicem rotundatis, ad basin cordatis, supra minutissime puberulis, subtus dense puberulis; inflorescentiis dense griseo-puberulis.

Woody and probably climbing shrub; branches slender, tetragonal, very densely short-pubescent or puberulent with sordid-gray hairs; nodes not plainly annulate; principal internodes

2--3.5 cm. long; leaf-scars comparatively large, elevated; leaves decussate-opposite; petioles slender, 5--10 mm. long, densely gray-puberulent; leaf-blades shortly elliptic or subrotund, thin-chartaceous, rather shiny above, 3.5--8 cm. long, 3.5--6 cm. wide, rounded at the apex, often with a very short tooth-like projection at the very tip, entire, conspicuously cordate at the base, very minutely puberulent above, especially along the midrib, or glabrescent, densely gray-puberulent throughout beneath; midrib slender, flat above, prominent beneath; secondaries very slender, 3--6 per side, irregular, not in opposite pairs, arcuate-ascending, flat or obscure above, prominulous beneath; veinlet reticulation very slender, abundant, rather conspicuous but not prominent above, slightly prominulous beneath; inflorescence terminal on short axillary twigs near the apex of the branches and forming a terminal panicle about 10 cm. long and wide, densely gray-puberulent throughout, the branches about 3 pairs, decussate-opposite; peduncle slender, tetragonal, 2--2.5 cm. long, densely gray-puberulent; sympodia resembling the peduncle in all respects; foliaceous bracts present at the nodes of the sympodia and beneath the individual cymes, resembling the leaves in form but rounded at the apex and somewhat less densely puberulent, submembranous; bractlets linear-oblong, 1--2 mm. long, acute, densely puberulent on both surfaces; pedicels very slender, 1 mm. long or less, densely gray-puberulent; calyx cyathiform, about 2 mm. long and 1 mm. wide, densely appressed strigose-puberulent with sordid gray hairs, the rim 5-toothed.

The type of this species was collected by Jean Baptiste Louis Pierre (no. 1208) at Pinlyšáp, Cambodia, in June, 1870, and is deposited in the Krukoff Herbarium at the New York Botanical Garden.

*STACHYTARPHETA RESTINGENSIS* Moldenke, sp. nov.

Fruticulus; caulibus ramisque crassis acute tetragonis glabris marginatis; foliis sessilibus vel subsessilibus subcoriaceis ellipticis vel suboblanceolatis obtusis vel subacutis utrinque glabris serratis; inflorescentiis spicatis; pedunculis brevibus tetragonis marginatis glabris; rhachide crasso glabro profunde excavato; bracteolis lanceolatis longe attenuatis glabris.

Shrubby and rather woody; stems and branches stout, acutely tetragonal, glabrous, the angles margined; nodes not annulate; principal internodes 3--4 cm. long; leaves decussate-opposite, sometimes with several small ones in their axils, sessile or subsessile, subcoriaceous, grayish-green, somewhat lighter beneath, elliptic or somewhat oblanceolate, 3.5--6 cm. long, 1.3--2.5 cm. wide, obtuse or subacute at the apex, rather regularly serrate with rounded teeth from the widest point to the apex, glabrous on both surfaces; midrib slender, flat above, slightly prominulent beneath; secondaries slender, 3 or 4 per side, ascending, slightly arcuate, flat on both surfaces or slightly prominulent beneath; veinlet reticulation rather sparse, flat on both surfaces, visible only on young leaves; inflorescence terminal,

spicate, to 30 cm. long; peduncle short, usually about 1 cm. long, tetragonal, margined, glabrous; rachis stout, glabrous, deeply excavated; bractlets lanceolate, about 5 mm. long, long-attenuate to the apex, glabrous, without scarious margins; calyx tubular, about 7 mm. long, glabrous; corolla and fruit not known.

The type of this species was collected by F. Segadas-Vianna, L. Dau, W. T. Ormond, G. C. Machline, and J. Lorêdo, Jr. (no. I-975) "no interior de brejo arborescente" near Barra de São João village, district of Barra de São João, Casimiro de Abreu Co., Rio de Janeiro, Brazil, on September 6, 1953, and is deposited in the herbarium of the Museu Nacional at Rio de Janeiro. Except for the texture of its leaves, it strongly resembles the West Indian S. jamaicensis (L.) Vahl.

PREMNA TANGANYIKENSIS Moldenke, sp. nov.

Frutex scandens; ramis ramulisque juventute dense fulvo-tomentellis, senectute glabrescentibus; sarmentis numerosis brevibus divergentibus obtuse tetragonis dense fulvo-tomentellis saepe minute aculeolatis; petioles brevibus debilibus dense fulvo-tomentellis; foliis membranaceis ellipticis argute acutis plusminusve serratis utrinque sparsiuscule breviterque tomentellis dein glabrescentibus, subtus plusminusve resinoso-glandulosis; inflorescentiis terminalibus axillaribusque subspicato-racemiformibus dense multo-floris simplicibus vel 1--2-brachiatis; pedunculo rhachideque dense fulvo-tomentellis; calyce elongato-tubuloso 4-plicato-costato dense fulvo-tomentello, margine 4-dentato, dentibus apiculatis; corollis flavis vel flavido-brunneis.

Scandent shrub or bush, 2--5 m. tall; branches and branchlets slender, obtusely tetragonal or subterete, densely fulvous-tomentellous when young, glabrescent in age; twigs numerous, short, divergent, obtusely tetragonal, densely fulvous-tomentellous, often minutely aculeolate, leafy; nodes not annulate; principal internodes 3--6 cm. long; leaves decussate-opposite, numerous; petioles slender, weak, 5--10 mm. long, densely fulvous-tomentellous; leaf-blades membranous, dark-green above, lighter beneath, elliptic, 4--10 cm. long, 2--4 cm. wide, sharply acute at the apex, more or less serrate from the middle or below the middle to the apex, abruptly acute at the base, rather sparsely short-tomentellous on both surfaces when young, usually glabrescent in age, more or less resinous-glandular beneath; midrib very slender, plane above, prominent beneath; secondaries very slender, few, 3--5 per side, distant, ascending, not much arcuate, joined in loops near or at the apex beneath, mostly obscure above; inflorescence terminal and axillary, subspicate-racemiform, to 8 cm. long, about 1.5 cm. wide, densely many-flowered, simple or with 1 or 2 short branches at the base, borne at the ends of the branchlets and spur-like twigs, sometimes abbreviated and congested; peduncles slender, 1--1.3 cm. long, resembling and continuous with the twigs, densely fulvous-tomentellous; rachis resembling the peduncle in all respects; bractlets numerous,

linear, 2--3 mm. long, blunt, densely fulvous-tomentellous; pedicels very short or obsolete; calyx elongate-tubular, about 4 mm. long and 2 mm. wide, 4-plicate-costate, densely fulvous-tomentellous, the rim 4-apiculate-toothed; corolla yellow or yellowish-brown.

The type of this species was collected by H. Gillman (no. 1328) in Makonde thicket on orange sands, at Kitangari, Newala District, at about 39°20' E. and 10°40' S., in southeastern Tanganyika, on March 23, 1943, and is deposited in the herbarium of the Royal Botanic Gardens at Kew. It was collected at about 1500 ft. alt.

*PYGMAEOPREMNA HERBACEA* var. *THAILANDICA* Moldenke, var. nov.

Haec varietas a forma typica speciei foliis anguste ellipticis vel oblanceolatis, margine irregulariter serratis vel subintegris recedit.

This variety differs from the typical form of the species in having its leaf-blades narrowly elliptic or oblanceolate, to 9.5 cm. long and 3--3.5 cm. wide, irregularly serrate with apiculate teeth or subentire with tiny apiculations in place of the teeth.

The type of the variety was collected by Tem Smitinand (no. 482) among grasses in an open pine forest, at an altitude of 800 meters, at Phetchabun, Lomkao, Namnao, in northern Thailand, on May 21, 1951, and is deposited in the H. N. Moldenke Herbarium at Yonkers, New York. The type specimen consists of two plants, whose leaves are very different in appearance as to their margin. If they should prove distinct the varietal name here proposed is designated to apply to the subentire-margined specimen.

*VERBENA MINUTIFLORA* Briq., sp. nov.

Herba; caulibus ramisque sarmentisque rigidis argutissime tetragonis glabris brunnescentibus; nodis contractis; foliis decussatis firme chartaceis uniforme viridibus divaricatis vel adscendentibus anguste ellipticis sessilibus acutis trinerviis parce strigillosis; spicis terminalibus solitariis vel ternis abbreviatis multifloris; calyce dense albo-strigoso.

Herb; stems erect, stiff, very sharply tetragonal, glabrous or practically so, concave between the margins in drying; branches and twigs numerous, stiffly ascending, medium-stoutish, very sharply tetragonal, concave between the angles in drying, glabrous or practically so, brunnescent in drying, somewhat contracted at the nodes; nodes annulate; principal internodes 3--8.5 cm. long; leaves decussate-opposite, firmly chartaceous, uniformly green on both surfaces, divaricate or ascending, narrowly elliptic, 1.1--3.3 cm. long, 3--6 mm. wide, acute at the apex, somewhat narrowed to the sessile base, finely strigillose above and on the venation beneath, 3-veined; midrib and the two secondaries very slender, impressed above, slightly prominent below, the secondaries subparallel to the midrib from above the base almost to the apex, not anastomosing; inflorescence terminating the branches and twigs, subpaniculate; individual spikes



usually in 3's, sometimes solitary or paired, abbreviated, less than 1.5 cm. long, less than 1 cm. wide, many-flowered, pedunculate; peduncles very slender, slightly gray-strigillose, especially toward the apex, angulate, sulcate in drying; bracts paired under the branches of the inflorescence, resembling the leaves in all respects but smaller; bractlets linear-subulate or lanceolate, one pair subtending the group of 3 spikes and one subtending each flower in the spike, the latter 1.5--2 mm. long, acute at the apex, very minutely and obscurely grayish-strigillose, closely appressed to the calyx; calyx tubular, 2.5--3 mm. long, 1 mm. wide, densely and very conspicuously white-strigose, the teeth somewhat unequal; corolla hypocrateriform, lilac, its tube very slender, about 4 mm. long, glabrous, its limb about 2 mm. wide, strigillose beneath, glabrous above.

The type of this interesting species was collected by Captain P. King, R. N. (no. 78) at Montevideo, Uruguay, and is deposited in the Delessert Herbarium at the Conservatoire et Jardin Botaniques in Geneva. The type specimen was annotated as "V. minutiflora Briq." by Briquet before his death and was photographed by Macbride as Type Photograph 24693, but a valid description of the plant does not appear to have been published before this. The species is related to V. montevidensis Spreng., but is easily distinguished in any series of specimens.

VERBENA PARVULA var. GIGAS Moldenke, var. nov.

Haec varietas a forma typica speciei recedit caulibus erectis usque ad 90 cm. altis et foliis magnis usque ad 7.5 cm. longis et 2.5 cm. latis.

This variety differs from the typical form of the species in having its stems erect, to 90 cm. tall, the internodes greatly elongated, and the leaves elliptic-oblongate, to 7.5 cm. long and 2.5 cm. wide.

The type of the variety was collected by Ellsworth Paine Killip and Albert Charles Smith (no. 21925) on an open hillside at an altitude of 3000 to 3200 meters, at Tarma, Junín, Peru, between April 20 and 22, 1929, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collectors describe the corollas as pinkish-white. The plant has much the aspect of V. litoralis, but the inflorescence characters are those of V. parvula Hayek.

xVERBENA SOLBRIGII Moldenke, nom. nov.

Glandularia laciniata x peruviana Schnack & Solbrig, *Revist. Fac. Agron. La Plata* 29: 255--266, figs. 1--4. 1953.

VITEX SCHLIEBENI Moldenke, sp. nov.

Arbor; ramulis graciussculis tetragonis griseis juventute dense patenteque pubescentibus, pilis brunneis, senectute glabrescentibus; foliis 5-foliolatis; petiolis densiuscule patenteque brunneo-pubescentibus; laminis tenuiter chartaceis ellipticis

longe acuminatis integris, ad basin acutis vel attenuato-acuminatis, supra glabris subscabrellis, subtus dense brunneo-puberulis; inflorescentiis axillaribus paniculatis adscendentibus vel erectis multifloris.

Tree, 8—10 m. tall; branchlets rather slender, tetragonal, gray, densely spreading-pubescent on the younger parts, glabrescent in age, the hairs brownish; nodes not annulate; principal internodes 1.3—3 cm. long; leaves decussate-opposite, 5-foliolate; petioles slender, 7—9 cm. long, rather densely spreading-pubescent with brownish hairs; leaflets thin-chartaceous, elliptic, dark-green on both surfaces, shiny above, unequal, the central one 14—17 cm. long, 4—6 cm. wide, long-acuminate at the apex, entire, acute or attenuate-acuminate at the base, on a petiolule 12—23 mm. long, the lateral ones smaller, the basal ones smallest, 5—6 cm. long, 2.5—3.5 cm. wide, very short-petiolulate or subsessile, all glabrous and subscabrellous above (except for the midrib) and densely puberulent with brownish hairs beneath, the hairs longer on the midrib and secondaries; midrib plane and puberulous above, prominent beneath; secondaries slender, 7—9 per side, ascending, arcuately joined near the margins, plane or subimpressed above, prominulent beneath; veinlet reticulation very abundant, plane or subimpressed above, prominulent beneath, the tertiaries distinct, issuing at about right angles and joining the secondaries, subparallel; inflorescence axillary near the apex of the branchlets, paniculate, the panicles ascending or erect, 4—5 cm. long, about 2 cm. wide, many-flowered; peduncles very slender, 1 cm. long or less, densely brownish-puberulent; rachis very slender, densely puberulent; pedicels elongate, filiform, 2—4 mm. long, densely brownish-puberulent; calyx campanulate, about 2 mm. long and wide, densely brownish-puberulent, the rim shallowly dentate; corolla hypocrateriform, white, the tube about 4 mm. long; stamens exserted.

The type of this species was collected by H. J. Schlieben (no. 6008) — in whose honor it is named — at Mbamba, at an altitude of 200 meters, Kimuera, 100 km. west of Lindi, Tanganyika, on February 17, 1935, and is deposited in the herbarium of the Botanisches Museum at Berlin. It was compared by J. B. Gillett at Kew, and he reports that it matches nothing there. It appears to be related to *V. volkensii* Gürke, but may be distinguished at once by the long pedicels.

*ERIOCAULON LONGIFOLIUM* f. *VIVIPARUM* Moldenke, f. nov.

Haec forma a forma typica speciei capitulis maturis viviparis recedit.

This form differs from the typical form of the species in having its mature heads decidedly viviparous.

The type of the form was collected by Mondl (no. 278) at Tontianak, Borneo, on April 7, 1931, and is deposited in the herbarium of the Botanisches Museum en Herbarium at Utrecht. Viviparous forms are known in several species in this family.

*TONINA FLUVIATILIS* f. *OBTUSIFOLIA* Moldenke, f. nov.

Haec forma a forma typica speciei foliis brevibus latis at apicem obtusis recedit.

This form differs from the typical form of the species in having its leaves short and broad, 10--12 mm. long, to 4 mm. wide when mature, and blunt or obtuse at the apex.

The type of the form was collected by Noël Yvri Sandwith (no. 1042), who reports the plant as lying flat among *Sagittaria*, etc. on the muddy shore of the river at Mazaruni Station, British Guiana, on August 12, 1937, and is deposited in the herbarium of the Botanisch Museum en Herbarium at Utrecht.

*ERIOCAULON SMITINANDI* Moldenke, sp. nov.

Herba acaulescens; foliis rosulatis anguste oblongis tenuibus argute acutis glabris; vaginis glabris; pedunculis numerosis pallide stramineis ubique dense longeque pilosis; capitulis globosis griseis.

Acaulescent herb; leaves rosulate, narrow-oblong, grass-like, thin-textured, uniformly bright-green on both surfaces, 3--4 cm. long, 1.5--2 mm. wide at the mid-point, sharply acute at the apex, glabrous, 4- or 5-ribbed, not noticeably pellucid-fenestrate; sheaths slender, closely appressed to the peduncles, 3--3.5 cm. long, many-striate, glabrous, obliquely split at the apex, the blade erect, lanceolate, closely appressed to the peduncle; peduncles numerous, erect, about 15 per plant, pale-stramineous, 8--15 cm. long, densely long-pilose throughout with irregularly spreading whitish hairs; heads globose, about 5 mm. long and wide, gray; involucre bractlets lanceolate, about 3.3 mm. long and 1 mm. wide, acute at the apex, long-pilose; receptacle densely long-pilose; receptacular bractlets obovate, about 1.8 mm. long and 0.3 mm. wide, densely long-pilose with antrorse hairs; staminate florets: sepals 3, separate, whitish, obovate, about 1.3 mm. long and 0.3 mm. wide, obtuse at the apex and short-barbellate there, otherwise glabrous; petals 3, united into a slender tube about 1 mm. long, the free lobes about 0.3 mm. long; stamens 3; anthers dark-brown; pistillate florets: sepals 3, separate, white, oblong, about 1.8 mm. long and 0.3 mm. wide, densely long-pilose on the back with antrorse hairs; petals 3, separate, whitish, linear-spatulate, about 1.5 mm. long and 0.2 mm. wide; style about 0.2 mm. long, stramineous, glabrous; stigma-branches about 0.8 mm. long; ovary globose, stramineous, about 0.3 mm. long and wide, 3-celled, 3-sulcate.

The type of this species was collected by my good friend and colleague, Tem Smitinand (no. 3679) -- in whose honor it is named -- who says that the species is very common in wet localities on the savannah at Chanburi, at an altitude of about 100 meters, on the trail between Makham and Khao Klu'a in south-eastern Thailand, collected on November 29, 1956, and deposited in the H. N. Moldenke Herbarium at Yonkers, New York. It is a pleasure to dedicate this species to a man who is doing such splendid work to increase of knowledge of the flora of Thailand.

*ERIOCAULON THAILANDICUM* Moldenke, sp. nov.

Herba acaulescens; foliis rosulatis anguste oblongis tenuibus 6-nerviis indistincte fenestratis glabris, ad apicem subulatis; vaginis laxis multistriatis glabris usque ad apicem ampliatis, limbo ovato longe acuminato vel subulato; pedunculis erectis tenuibus aureo-stramineis 3-costatis tortis glabris; capitulis griseis subglobosis.

Acaulescent herb; leaves rosulate, narrow-oblong, grass-like, thin-textured, bright-green above, somewhat lighter beneath, 1.5--2.5 cm. long, about 2 mm. wide at the mid-point, subulate-tipped at the apex, about 6-ribbed, rather indistinctly fenestrated, glabrous; sheaths rather loose, 2--2.5 cm. long, many-striate, glabrous, usually amplate toward the apex, obliquely split at the apex, the limb ovate, erect or somewhat reflexed, long-acuminate or subulate-tipped; peduncles erect, slender, golden-stramineous, 12--13 cm. long, 3-costate, twisted, glabrous; heads subglobose, 5--7 mm. long and wide, gray; involucre bractlets stramineous, oblanceolate, about 3.3 mm. long and 1.6 mm. wide, long-acuminate or subulate-tipped at the apex; receptacle long-pilose; receptacular bractlets spatulate, whitish, about 2.3 mm. long and 0.6 mm. wide, long-caudate at the apex, long-pilose at the base, otherwise glabrous; staminate florets: sepals 3, separate, obovate, about 1.3 mm. long and 0.6 mm. wide, sparsely short-barbellate at the blunt apex, long-pilose at the base; petals 3, united into a slender tube about 1 mm. long; stamens 3; anthers brown; pistillate florets: sepals 3, separate, whitish, oblanceolate, about 2 mm. long and 0.5 mm. wide, acute at the apex, long-pilose on the back; petals 3, separate, oblong, about 1.6 mm. long and 0.3 mm. wide, acute at the apex, long-pilose on the back; pistil about 1 mm. long, glabrous; ovary subglobose, 3-celled, 3-sulcate.

The type of this species was collected by Bunnak Sangkhachand (no. 571a), common in a savannah at Chanturi, at an altitude of about 200 meters, Pong Namrawn, Ban Taru'ang, in south-eastern Thailand, on December 5, 1956, and is deposited in the H. N. Moldenke Herbarium at Yonkers, New York. The collector records the vernacular name "chuk nok yung".

*PAEPALANTHUS DENNISI* Moldenke, sp. nov.

Herba acaulescens parvissimis; foliis caespitosis recurvatis ad apicem subulatis, ad basin ampliata in pilis densissimis longis albidis occultis; pedunculo solitario glabro 4-costato recto plerumque in pilis occulto; capitulis hemisphaericis albedo-nigris.

Acaulescent herb, very diminutive in size; leaves caespitose, recurved, rather thick-textured, shiny-green on both surfaces, 1--1.5 cm. long, about 1 mm. wide at the mid-point, subulate-tipped at the apex, the greatly amplate base hidden in a very dense mass of long white cottony hairs; peduncle solitary, mostly hidden in the cottony hairs, 5--7 mm. long, glabrous, 4-costate, not twisted; heads hemispheric, about 6 mm. wide,



whitish when viewed from above, blackish when viewed from the side; involucre bractlets dark-brown or blackish, ovate, about 2 mm. long and 1.6 mm. wide, blunt and white-barbellate at the apex; receptacle densely long-pilose; receptacular bractlets obovate-spatulate, about 2 mm. long and 0.6 mm. wide, dark-brown and densely white-barbellate at the apex; staminate florets: sepals 3, separate, dark-brown, broadly oblong, about 1 mm. long and 0.5 mm. wide, densely white-barbellate at the apex; petals 3, united into a white glabrous infundibular tube about 1.3 mm. long, the free lobes very short; stamens 3; anthers light-brown; pistillate florets: sepals 3, separate, dark-brown, oblanceolate, about 1.3 mm. long and 0.6 mm. wide, densely white-barbellate at the rounded apex; petals 3, hyaline, separate, about 1 mm. long and 0.3 mm. wide, long-pilose toward the apex with antrorse hairs; pistil about 1 mm. long, glabrous; ovary globose, 3-celled, 3-sulcate.

The type of this amazing little species was collected by R. W. G. Dennis -- in whose honor it is named -- at Mucubaji, at an altitude of 3500 meters, in the Sierra de Santo Domingo, Mérida, Venezuela, on August 26, 1958, and is deposited in the H. N. Moldenke Herbarium at Yonkers, New York.

*PAEPALANTHUS MEXIAE* Moldenke, sp. nov.

Herba perennis; caulibus brevissimis densissime longo-pilosis, pilis brunneis; foliis graminoides subnumerosis subchartaceis abrupte acutis multistriatis utrinque glabris nitidisque; vaginis arctissime adpressis dense pilosis; pedunculis gracilibus numerosis pallide brunneis dense piloso-pubescentibus; capitulis hemisphaericis atro-griseis.

Perennial herb; stems very short, very densely long-pilose with brown cottony hairs; leaves grass-like, erect or ascending, rather numerous, rather chartaceous in texture, 20--22 cm. long, 1--2 cm. wide, abruptly acute at the apex, many-ribbed, not fenestrate, glabrous and glistening-shiny on both surfaces; sheath so closely appressed to the peduncle as to be almost indiscernible, 6--7 cm. long, densely long-pilose with brownish hairs when young, less so in age; peduncles slender, numerous, 10--20 per plant, erect, light-brownish, 22--30 cm. long, densely pilose-pubescent with whitish hairs when young, more sparsely brownish-pilosulous in age; heads hemispheric, about 8 mm. wide, dark-gray; involucre bractlets dark-brown, ovate, about 2.2 mm. long and 1 mm. wide, acute at the apex, glabrous and shiny; receptacle long-pilose; receptacular bractlets brown, obovate, about 2.3 mm. long and 1.5 mm. wide, abruptly acute and ciliolate-barbellate at the apex, otherwise glabrous; staminate florets: sepals 3, separate, obovate, brown, about 2 mm. long and 1 mm. wide, short-barbellate at the apex, otherwise glabrous; petals 3, stramineous, united into a slender infundibular tube about 2 mm. long, glabrous, 3-lobed at the apex; stamens 3; anthers light-brown; pistillate florets: sepals 3, separate, brown, obovate, about 2.3 mm. long and 1 mm. wide, densely white-barbellate at the subtruncate apex; petals 3, separate, stramineous, obovate, about 2.3 mm.

long and 0.8 mm. wide, ciliolate toward and at the obtuse apex; style stout, about 0.2 mm. long, glabrous; stigmas 3, much surpassed by the 3 long-caudate style-branches which are 1.3--1.6 mm. long; ovary globose, brown, about 0.6 mm. long and wide, 3-celled and 3-sulcate.

The type of this species was collected by Ynes Enriquetta Julietta Reygadas, née Mexia (no. 5833) — in whose honor it is named — in a damp clay bank, at an altitude of 1160 meters, at Ochristais, near Corrigo Dois Puntos, Distrito Diamantina, Minas Gerais, Brazil, on May 13, 1931, and is deposited in the Britton Herbarium at the New York Botanical Garden. The collector affirms that the species is frequent at the type locality and has "whitish-gray" flowers. Standley misidentified the plant as Eriocaulon kunthii Körn., under which name it has been widely distributed.

**PAEPALANTHUS SINGULARIUS** Moldenke, sp. nov.

Herba pygmaea caulescens perennis; caulibus gracilibus valde furcatis densissime foliosis dense pilosis; foliis numerosissimis arctissime imbricatis lanceolatis crassis adscendentibus obtusis glabratissimis nitidis; pedunculis per ramulo solitariis filiformibus 2-costatis rectis glabris brunneis; vaginis brunneis ad apicem plusminusve pilosis; capitulis hemisphaericis brunneis.

Dwarf caulescent perennial herb; stems 1--2 cm. long, slender, abundantly branched, densely leafy, forming dense tufts or cushions, densely long-pilose; leaves very abundant, very closely imbricate, lanceolate, thick-textured, ascending, about 3 mm. long, blunt-tipped, glabrous and shiny or very obscurely pilosulous, the base hidden in the dense stem hairs; peduncles apparently one per branch, borne near its apex, about 2 cm. long, filiform, 2-costate, hardly twisted, glabrous, brown; sheath slender, about 4 mm. long, brown, not ribbed, oblique and more or less pilose at the apex, the limb somewhat recurved; heads hemispheric, about 2.1 mm. wide, brown; involucre bractlets light-brown, obovate, about 1 mm. long and 0.5 mm. wide, acute at the apex, glabrous; staminate florets: sepals 3, separate, brown, oblanceolate-spatulate, about 0.6 mm. long and 0.3 mm. wide, rounded at the apex; petals 3, brownish, united into a slender tube about 0.6 mm. long; stamens 3; anthers very small; pistillate florets: sepals 3, separate, stramineous, oblong, about 0.6 mm. long and 0.1 mm. wide, acute at the apex, pilose on the back at the apex; petals 3, separate, hyaline, very small.

The type of this curious dwarf species was collected by Adolfo Ducke (no. 9109) northeast of Taboleirinha, on the Rio Manuera, Pará, Brazil, on December 12, 1907, and is deposited in the H. N. Moldenke Herbarium at Yonkers, New York.

**SYNGONANTHUS SICKII** Moldenke, sp. nov.

Herba acaulescens annua; foliis linearibus rosulatis tenuibus glabris obtusis; pedunculis erectis filiformibus viridibus 2-cos-

tatis paullo tortis ubique densiuscule albido-pilosulis; vaginis arctissime appressis 5-striatis minute stellato-puberulis; capitulis albis; bracteolis interioribus magnis ampliatis albis.

Annual acaulescent herb; leaves linear, rosulate, thin-textured, 7—10 mm. long, about 0.5 mm. wide, several-striate, glabrous, shiny-green, blunt at the apex; peduncles about 6 per plant, erect, filiform, greenish, 2-costate, very slightly twisted, rather densely whitish-pilosulous throughout; sheaths very closely appressed to the peduncle, 1.7—2.5 cm. long, plainly 5-ribbed, glabrous on the ribs, often very obscurely and minutely stellate-puberulent with blackish hairs in some of the sulcations, obliquely split at the apex, the limb erect and closely appressed to the peduncle; heads white, about 7 mm. wide, Anthemis-like; outer involucre bractlets oblanceolate, pale-stramineous, about 0.8 mm. long and 0.3 mm. wide, rounded at the apex, glabrous; inner involucre bractlets much enlarged, shiny-white, obovate, concave on the upper surface, about 3 mm. long and 1.5 mm. wide, rounded at the apex, glabrous; staminate florets stalked: sepals 3, separate, white, about 1.2 mm. long and 0.3 mm. wide, obtuse at the apex, glabrous; petals 3, connate into a slender tube about 0.6 mm. long, glabrous; stamens 3; pistillate florets not seen.

The type of this species was collected by H. Sick (s.n.) in the Serra do Cachimbo of southern Pará, Brazil, in May, 1957, and is deposited as sheet no. 4703 in the G. F. J. Pabst Herbarium at Rio de Janeiro.

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## MATERIALS TOWARD A MONOGRAPH OF THE GENUS PSEUDOCARPIDIUM. I

Harold N. Moldenke

This is the twenty-first in my series of monographic works on the genera of Verbenaceae. Previous genera so treated are Aegiphila Jacq., Amasonia L. f., Baillonia Bocq., Bouchea Cham., Casselia Nees & Mart. [Timotocia Moldenke], Castelia Cav., Chascanum E. Mey., Citharexylum B. Juss., Cornutia Plum., Parodianthus Troncoso, Petitia Jacq., Petrea Houst., Priva Adans., Recordia Moldenke, Rehdera Moldenke, Rhaphithamnus Miers, Svensonia Moldenke, Tectona L. f., Vitex Tourn., and the New World and cultivated members of Callicarpa L.

Full explanation of the abbreviations employed herein for the names of the 249 herbaria whose material was examined in the preparation of this work will be found in Phytologia 5: 154—159 (1955) and 6: 242 (1958), with the following additions:

Bd = Herbarium Bradeanum, Rio de Janeiro, Brazil

Gl = Museu Goeldi, Belém, Pará, Brazil

Mm = McGill University, Montréal, Quebec, Canada